COURSE DESCRIPTION – ACADEMIC YEAR 2016/2017

<table>
<thead>
<tr>
<th>Course title</th>
<th>Software Factory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course code</td>
<td>72126</td>
</tr>
<tr>
<td>Scientific sector</td>
<td>INF/01</td>
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<tr>
<td>Degree</td>
<td>Master in Computer Science (LM-18)</td>
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<tr>
<td>Semester</td>
<td>1</td>
</tr>
<tr>
<td>Year</td>
<td>2</td>
</tr>
<tr>
<td>Credits</td>
<td>8</td>
</tr>
<tr>
<td>Modular</td>
<td>No</td>
</tr>
<tr>
<td>Total lecturing hours</td>
<td>24</td>
</tr>
<tr>
<td>Total lab hours</td>
<td>--</td>
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<tr>
<td>Total exercise hours</td>
<td>48</td>
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Attendance

Prerequisites

Participation in Quality Software Factory course requires

- Basic software development skills
- Basic understanding of the agile development approach

Course page

https://ole.unibz.it/

Specific educational objectives

The course belongs to the type “caratterizzanti – discipline informative.”

The course will provide the participant with experience in

- software development in a business-like context;
- global software development with agile and lean methods in use;
- up-to-date development environment with latest technology (cloud, SOA, ...).

Lecturer

Davide Taibi

Contact

Piazza Domenicani 3, Room 1.13, davide.taibi@unibz.it

Scientific sector of lecturer

ING-INF/04

Teaching language

English

Office hours

Friday 16:00-18:00 or on appointment. Please, arrange beforehand by email.

Lecturing Assistant (if any)

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Contact LA

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Office hours LA

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List of topics

- Introduction to software factory work, work environment and international working environment
- Introduction of the business application to be build and technology patterns to be used
- Team set-up and teamwork workshops
- Working in varying international teams
- Working with latest technology containing cloud environment, web*services development / SOA environment, code co-development tools
- Frequent demonstrations of results, especially working software
- Team working skills and practices, and their continuous improvement, retrospective workshops

Teaching format

Frontal lectures, exercises, workshops.
| Learning outcomes | Knowledge and understanding:  
|                  | - Know the main methods and techniques for designing, creating, and maintaining software products and services.  
|                  | - Know the main methods for (re)engineering, refactoring and optimizing software products and processes.  
|                  | - Know the main methods of team, resource management and risks analysis in software development and maintenance.  
|                  | Applying knowledge and understanding:  
|                  | - Be able to design and implement information systems in vertical sectors of applications according to technical, functional and organizational requirements  
|                  | - Be able to apply methods of verification and validation of software  
|                  | - Be able to use and adapt process modeling software tools for the development of information systems.  
|                  | - Be able to understand and write documentation for technical, scientific reporting  
|                  | Making judgments  
|                  | - Be able to plan and re-plan a technical project activity aimed at building an information system and to bring it to completion by meeting the defined deadlines and objectives.  
|                  | - Be able to independently select the documentation required to keep abreast of the frequent technological innovations in the field by using a wide variety of documentary sources.  
|                  | Communication skills  
|                  | - Be able to present in a fixed time the content of a scientific / technical report in front of an audience.  
|                  | - Be able to coordinate the work of a project team and to interact positively with members of the group.  
|                  | Learning skills  
|                  | - Be able to read and understand scientific and technical documentation.  
|                  | - Be able, in the context of a problem-solving activity, to extend even incomplete knowledge taking into account the objective of the project.  
| Assessment |  
| Assessment language | English  
| Evaluation criteria and criteria for awarding marks | Final mark composed by  
|                  | - 70% project work  
|                  | - 30% oral exam.  
|                  | Relevant for oral exam: clarity of answers, ability to summarize, evaluate, and establish relationships between topics.  
|                  | Relevant for project work: Identified solution, documentation completeness, process compliance, artifact quality.  

Hands in development work in Software Factory
## Required readings
- Software Factory Magazine
- Agile practices (Kanban / Kniberg, Agile / XP / Beck)
  During the factory work further material about topics will be included like:
  - on-line / web documentation of the development environment
  - articles and research papers on agile and lean development

## Supplementary readings
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## Software used
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